



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/966,985	11/10/1997	JEFFREY JACOBSEN	KPN96-03A8	6374

21005 7590 02/23/2004

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

EXAMINER

PIZIALI, JEFFREY J

ART UNIT	PAPER NUMBER
----------	--------------

2673

DATE MAILED: 02/23/2004

33

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/966,985

Applicant(s)

JACOBSEN ET AL.

Examiner

Jeff Piziali

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20,22-27 and 37-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20,22-27 and 37-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 1997 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 26 January 2004 has been entered.

2. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilska et al. (UK - 2,289,555) in view of Takahara et al. (US 5,436,635).

Regarding claim 1, Wilska discloses a portable communications device having a reflective display comprising a device housing [Fig. 1, 1] having a wireless receiver [Fig. 1, 18]; a liquid crystal display [Fig. 1, 9] having an array of at least 75,000 pixel electrodes; a display control circuit [Fig. 3, 6] positioned in the housing and connected to the wireless receiver and the matrix display such that image data that is received by the receiver is input to the display control circuit, which generates a display signal to drive the electrodes (see Page 3, Paragraph 8 - Page 6, Paragraph 1). Wilska does not expressly disclose an active matrix LCD, a lens, a light emitting diode, an optical coupler, nor a power management circuit.

However, Takahara does disclose an active matrix liquid crystal display [Fig. 21, 214]; a lens [Fig. 21, 216] that focuses an image on the display for viewing by a user; a light emitting diode light source [Fig. 21, 211] optically coupled to the display for illuminating the image; and an optical coupler [Fig. 21, 213] that couples light from the light source onto the matrix display and the reflected light through the lens (see Column 28, Lines 30-49 and Column 33, Lines 22-28), and a power management circuit [Fig. 22, 223] that lowers the power consumption of the

Art Unit: 2673

control circuit [Fig. 22, 225] after the image is illuminated until display data [Fig. 22, 'video signal'] for the next image from the control circuit is ready to be presented to the matrix display [Fig. 22, 214], without comparing the illuminated image with the next image (see Column 31, Lines 16-63). Wilska and Takahara are analogous art because they are from the field of portable communications devices. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Takahara's active matrix LCD, lens, LED light source, and optical coupler assembly with Wilska's communication device, so as to provide a high quality liquid crystal image that's easy to see (and read) in both dark and bright light.

Regarding claim 2, Takahara discloses reflective pixel electrodes (see Column 7, Lines 50-56) and further comprising a transistor circuit formed with single crystal silicon [Fig. 18A, 167c] associated with each pixel electrode (see Column 24, Line 35 - Column 25, Line 59).

Regarding claim 3, Takahara discloses a color sequential display circuit (see Fig. 15; Column 23, Lines 12-37).

Regarding claim 4, Takahara discloses a switching circuit [Fig. 1, 11-14] connected to a counterelectrode panel of the matrix display for switching the applied voltage to the counterelectrode panel (see Column 13, Lines 20-65).

Regarding claim 37, Takahara discloses the power consumption of the control circuit being lowered between sequentially generated images (see Column 31, Lines 16-63).

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilska et al. (UK - 2,289,555) in view of Takahara et al. (US 5,436,635) as applied to claim 3 above, and further in view of Shigeta et al. (US 5,394,204).

Regarding claim 5, neither Wilska nor Takahara expressly disclose a dichroic prism interposed between the lens and the matrix display. However, Shigeta discloses a dichroic prism [Fig. 9, 63] interposed between a lens [Fig. 9, 53 & 64] and a matrix display [Fig. 9, 60-62] (see Column 1, Lines 14-39). Wilska, Takahara, and Shigeta are analogous art because they are from the field of matrix display systems. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Shigeta's prism system with Wilska's and Takahara's combined communications device to provide a large-sized color image.

6. Claims 6-8, 10-19, 21-24, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilska et al. (UK - 2,289,555) in view of Takahara et al. (US 5,436,635), Shigeta et al. (US 5,394,204), and Yagyu (US 5,856,814).

Regarding claim 6, this claim is rejected by the reasoning applied in the above rejection of claims 1, 3, and 5; furthermore, Wilska discloses a battery [Fig. 3, 3]. None of Wilska, Takahara, and Shigeta expressly disclose the light source being three light emitting diodes of three distinct colors. However, Yagyu discloses a light source [Fig. 10, 104] that is three light emitting diodes [Fig. 10, EDR, EDG and EDB] of three distinct colors (see Column 8, Lines 19-47). Wilska, Takahara, Shigeta, and Yagyu are all analogous art because they are from the field of liquid crystal displays. Thus, it would have been obvious to a person of ordinary skill in the

Art Unit: 2673

art, at the time of the invention, to utilize Yagyu's three light emitting diodes system as Wilska's, Takahara's, and Shigeta's combined light source, so as to provide a color display for easy viewing.

Regarding claims 7 and 15, Takahara discloses a diffuser (see Column 4, Lines 14-46).

Regarding claim 8, Shigeta discloses at least one dichroic mirror [Fig. 10, 56-59] for directing the light from one light emitting diode and allowing light from another light emitting diode to pass through (see Column 1, Lines 14-39 and Column 7, Lines 3-15).

Regarding claims 10 and 18, Wilska discloses a telephone [Fig. 3, 17] (see Page 5, Paragraph 3).

Regarding claims 11 and 19, Wilska discloses a docking station for a wireless telephone [Fig. 3, 17] (see Page 5, Paragraph 3).

Regarding claim 12, this claim is rejected by the reasoning applied in the above rejection of claims 1, 2, 5, and 6; furthermore, while Wilska does not expressly disclose an array of at least 640 x 480 pixel electrodes, Wilska does disclose providing a resolution greater than 640 x 200 pixels² (see Page 4, Paragraph 2). Therefore, for the purpose of providing a precise display image, it would have been additionally obvious to an artisan at the time of invention to utilize 640 x 480 pixel electrodes.

Regarding claims 13 and 23, this claim is rejected by the reasoning applied in the above rejection of claim 3.

Regarding claim 14, this claim is rejected by the reasoning applied in the above rejection of claim 12.

Regarding claims 16 and 22, Shigeta discloses a pair of dichroic mirrors [Fig. 10, 56-59], each mirror for directing the light from one light emitting diode and allowing light from at least another light emitting diode to pass through (see Column 1, Lines 14-39 and Column 7, Lines 3-15).

Regarding claim 17, Wilska discloses a camera [Figs. 1-3; 15 & 16] (see Page 4, Paragraph 5).

Regarding claim 21, Wilska does not expressly disclose the LCD having an active area of less than 100mm^2 . However, Wilska's does disclose variable LCD dimensions (see Page 4, Paragraph 2). Therefore, it would have been obvious to an artisan at the time of invention to utilize a smaller display area (such as 100mm^2 for instance) so as to conserve overall system size and weight.

Art Unit: 2673

Regarding claim 24, this claim is rejected by the reasoning applied in the above rejection of claim 4.

Regarding claim 38, this claim is rejected by the reasoning applied in the above rejection of claim 37.

Regarding claim 39, this claim is rejected by the reasoning applied in the above rejection of claim 37.

7. Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilska et al. (UK - 2,289,555) in view of Takahara et al. (US 5,436,635), Shigeta et al. (US 5,394,204), and Yagyu (US 5,856,814) as applied to claims 6 and 12 above, and further in view of Kikinis et al. (US 5,634,080).

Regarding claims 9 and 20, none of Wilska, Takahara, Shigeta, and Yagyu expressly disclose a wireless pager. However, Kikinis et al. discloses a wireless pager [Fig. 12, 92] (see Column 18, Lines 7-20). Wilska and Kikinis et al. are analogous art because they are from the field of portable communication devices. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of the invention, to utilize Kikinis' wireless pager interface with Wilska's, Takahara's, Shigeta's, and Yagyu's combined communication device to offer another commercially popular communication function.

Art Unit: 2673

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilska et al. (UK - 2,289,555) in view of Takahara et al. (US 5,436,635) as applied to claim 2 above, and further in view of Yagyu (US 5,856,814).

Regarding claim 25, this claim is rejected by the reasoning applied in the above rejection of claim 6.

9. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilska et al. (UK - 2,289,555) in view of Takahara et al. (US 5,436,635) and Yagyu (US 5,856,814) as applied to claim 25 above, and further in view of Shigeta et al. (US 5,394,204).

Regarding claim 26, this claim is rejected by the reasoning applied in the above rejection of claim 8.

Regarding claim 27, Yagyu discloses the three light emitting diodes are flashed concurrently to emit white light (see Column 8, Lines 19-47).

Response to Arguments

10. Applicants' arguments filed 26 January 2004 have been fully considered but they are not persuasive. The applicants contend the cited prior art does not teach a power management circuit that lowers the power consumption of the control circuit after the image is illuminated until display data for the next image from the control circuit is ready to be presented to the matrix display, the power consumption of the control circuit being lowered between sequentially generated images, and without comparing the illuminated image with the next image. However,

Art Unit: 2673

the examiner respectfully disagrees. Takahara et al. (US 5,436,635) discloses a power management circuit [Fig. 22, 223] that lowers the power consumption of the control circuit [Fig. 22, 225] after the image is illuminated until display data [Fig. 22, 'video signal'] for the next image from the control circuit is ready to be presented to the matrix display [Fig. 22, 214], the power consumption of the control circuit being lowered between sequentially images, and without comparing the illuminated image with the next image (see Column 31, Lines 16-63).

The applicants are correct that the quantity of light emitted by Takahara's light emitting tube [Fig. 22, 211] is varied in proportion to the pulse width to reduce power consumption. However, Takahara also states, "The light emitting tube power supply circuit has a circuit for modulating the anode voltage with a pulse signal. The pulse signal cycle is 60 Hz. By using the pulse signal as the voltage applied to the anode, the quantity of light emitted from the light emitting tube 211 can be varied in proportion to the pulse width" (see Column 31, Lines 32-38). Therefore, the frequency of the pulse signal (i.e. the display refresh rate) also determines the level of power consumption of the circuit. Accordingly and inherently, during the moments between consecutive signal pulses, the applied voltage drops, and power is thusly conserved between sequential image illuminations.

The applicants further contend the cited prior art neglects to teach lengthening the lifetime of an energy source used to power the display. However, such explicit limitations do not exist in present claim language. By such reasoning, rejection of the claims is deemed proper, necessary and thereby maintained at this time.

Art Unit: 2673

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (703) 305-8382. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J.P.

20 February 2004



BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2000